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EXAMINER

MUTSCHLER, BRIAN L

ART UNIT

PAPER NUMBER

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8

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/772,994

Applicant(s)

MORIZANE ET AL.

Examiner

Brian L. Mutschler

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 13 June 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Comments***

1. The objections to the specification have been overcome by Applicant's amendment except for the objection to the use of undefined acronyms on page 11 at lines 16-17.
2. The rejection of claims 5 and 9 under 35 U.S.C. 112 2<sup>nd</sup> paragraph have been overcome by Applicant's amendment.

### ***Priority***

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

4. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on June 13, 2002 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

### ***Specification***

5. The disclosure is objected to because of the following informalities:
  - a. On the last line of page 5 of the response, the correction for page 9, line 5, "(Iridium Tin Oxide)" should be changed to "(Indium Tin Oxide)"; and

- b. On page 11, lines 16-17, the acronyms PVDF, FEP, ETFE, and PMMA should be defined.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 is rejected because it does not clearly define the claimed structure of the device. As it is written, claim 7 could be interpreted as the water transmission preventing layer being located within the sealing resin, or the interval part between the solar cell elements being located in the sealing resin. Claim 7 should be rewritten to distinctly identify the subject matter being claimed. The Examiner has assumed that the interval part between the solar cell elements was located in the sealing resin.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

Art Unit: 1753

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or  
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

9. Claims 1-3 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamagishi et al. (U.S. Pat. No. 6,300,556).

Yamagishi et al. show a solar cell module that has a sodium containing light transmitting member **1**, a rear surface resin film **8** and a plurality of solar cell elements sealed with sealing resin **9** between the front member **1** and the rear surface member **8** (col. 3, line 18; col. 4, line 14; fig. 1). In the solar cell module of Yamagishi et al., the rear surface resin film **8** also functions as the water transmission preventing layer (col. 5, line 59). The light transmitting member **1** is made of soda lime glass, and the rear surface resin film **8** is a transparent resin film made of PVF (col. 7, line 29; col. 8, line 67). The rear surface resin film **8** has a water vapor transmission rate (WVTR) smaller than the WVTR of the EVA sealing resin **9** (see p. 22, line 8 of the instant application for WVTRs).

Regarding claim 7, the rear surface resin film **8** covers the interval part between adjacent solar cell elements (fig. 1).

Since Yamagishi et al. teach the limitations of the instant claims, the reference is deemed to be anticipatory.

Art Unit: 1753

10. Claims 1-3 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Kondo (U.S. Pat. No. 6,271,053).

Kondo shows a solar cell module comprising a light transmitting member **1** on a front surface side containing sodium, a rear surface resin film **9**, a plurality of solar cell elements **11** sealed with a sealing resin **8** (col. 6, line 58; col. 7, line 31; fig. 1). The rear surface resin film **9** also serves as a water transmission preventing layer (col. 2, line 18). The light transmitting member **1** is made of soda lime glass, and the rear surface resin film **9** is a transparent resin film made of PVF (col. 2, line 18; col. 6, line 58). The rear surface resin film **9** has a water vapor transmission rate (WVTR) smaller than the WVTR of the EVA sealing resin **8** (see p. 22, line 8 of the instant application for WVTRs).

Regarding claim 7, the rear surface resin film **9** covers the interval part between adjacent solar cell elements (fig. 1).

Since Kondo teaches the limitations of the instant claims, the reference is deemed to be anticipatory.

### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamagishi et al. (U.S. Pat. No. 6,300,556) in view of Otani et al. (PG-Pub 2001/0009160 A1).

Yamagishi et al. disclose a solar cell module having the limitations recited in claim 1, as explained above in paragraph 9.

Yamagishi et al. do not disclose the use of an inorganic oxide layer, a nitride layer or a fluoride layer formed on a surface of the rear surface resin film, as recited in the limitations of claim 4 of the instant invention.

Otani et al. teach the use of an inorganic oxide layer on a transparent resin film because "a coating of inorganic oxide is preferably used as a moistureproof layer" over metal layers, which have "a possibility of current leakage" (par. [0042]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided an inorganic oxide layer on the rear surface resin film of Yamagishi et al. because inorganic oxide layers create moistureproof layers while eliminating the possibility of current leakage, as taught by Otani et al. (par. [0042]).

With respect to claim 9, Yamagishi et al. disclose a water transmission preventing layer that is the rear surface resin film. However, Yamagishi et al. do not disclose the layer having a WVTR no higher than  $6.3\text{g/m}^2\cdot\text{day}$ , as recited in claim 9 of the instant invention.

Otani et al. disclose a resin film that is made of PET to a thickness of 250 $\mu$ m, which corresponds to a WVTR of 2.5g/m<sup>2</sup>·day (par. [0044]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the solar cell module of Yamagishi et al. to use the resin film of Otani et al. as the rear surface resin film because the resin film taught by Otani et al. has a very low WVTR, which would help prevent against performance degradation due to water absorption.

13. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamagishi et al. (U.S. Pat. No. 6,300,556) in view of Jansen et al. (U.S. Pat. No. 6,077,722).

Yamagishi et al. disclose a solar cell module having the limitations recited in claim 1, as explained above in paragraph 9. Yamagishi et al. do not disclose the use of a glass water transmission preventing layer bonded to the surface of the rear surface resin film, as recited in the limitation of claim 5 of the instant invention.

Jansen et al. teach the use of a glass rear layer **44** bonded to a rear resin surface film **46** to "provide enhanced environmental protection for the photovoltaic module" (col. 5, line 27; col. 8, line 61; fig. 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the solar cell module of Yamagishi et al. using the glass water transmission preventing layer taught by Jansen et al. because the glass



layer would "provide enhanced environmental protection for the photovoltaic module" (col. 5, line 27).

14. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamagishi et al. (U.S. Pat. No. 6,300,556) in view of Haigh et al. (U.S. Pat. No. 6,265,653).

Yamagishi et al. disclose a solar cell module having the limitations recited in claim 1, as explained above in paragraph 9. Yamagishi et al. do not disclose forming the water transmission preventing layer on a plane with the solar cell elements, as recited in the limitations of claim 6.

Haigh et al. disclose a solar cell module having a layer **38** formed on a plane with the solar cell elements **30**, **32** (col. 4, lines 33 and 57; fig. 5). The layers **38** are formed of materials with low WVTRs and electrically isolate the cells from each other (col. 4, line 33).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the solar cell modules of Yamagishi et al. to use the layers of Haigh et al. formed on a plane with the solar cell elements because making the modules with water transmission preventing layers on a plane with the solar cell elements would not only provide protection against water, but would also electrically isolate the solar cells from one each other, as taught by Haigh et al. (col. 4, line 33).

Art Unit: 1753

15. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamagishi et al. (U.S. Pat. No. 6,300,556) in view of Matsushita et al. (U.S. Pat. No. 6,222,118).

Yamagishi et al. disclose a solar cell module having the limitations recited in claim 1, as explained above in paragraph 9. Yamagishi et al. do not disclose providing the water transmission preventing layer on an outer side of the rear surface resin film.

Matsushita et al. teach the use of waterproof films **56, 57** on the outer side of each substrate **21, 22** (col. 7, line 61). The waterproof films **56, 57** are used to prevent the substrates **21, 22** from absorbing water (col. 8, line 5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the solar cell modules of Yamagishi et al. to use water transmission preventing layers on an outer side of the rear surface resin film because having a water transmission preventing layer on an outer side of the rear film would prevent the rear film from absorbing water, as taught by Matsushita et al. (col. 8, line 5).

16. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamagishi et al. (U.S. Pat. No. 6,300,556) in view of Van Andel et al. (U.S. Pat. No. 6,184,057) and in view of Pollard (U.S. Pat. No. 6,034,322).

Yamagishi et al. disclose a solar cell module having the limitations recited in claim 1, as explained above in paragraph 9. The device of Yamagishi et al. differs from

Art Unit: 1753

the instant invention because Yamagishi et al. do not disclose the use of a glass plate having a thickness of 0.005 to 0.1 mm as a water transmission preventing layer.

Pollard discloses the use of thin cover glass having a typical thickness of 75  $\mu\text{m}$  to 150  $\mu\text{m}$  (0.075 to 0.15 mm) (col. 4, lines 58-67). Thicker glass layers are "significantly stronger" and "thinner glass is desired for other considerations as mass reduction" (col. 4, lines 58-67).

Van Andel et al. disclose a flexible solar cell having a glass protective window with a thickness of 100 to 200 nm (0.0001 to 0.0002 mm) (col. 6, lines 16-21).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the solar cell of Yamagishi et al. to use a glass layer having a thickness between 0.005 and 0.1 mm, because Pollard and Van Andel teach the use of thin cover glass to protect the solar cell and Pollard further teaches that thicker glass is "significantly stronger" and "thinner glass is desired for other considerations as mass reduction" (US '322 col. 4, lines 58-67). One skilled in the art would choose the thickness of the glass based on the desired properties of the finished solar cell module, such as increased structural strength or decreased weight.

### ***Double Patenting***

17. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

18. Claims 1-3 and 7 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of copending Application No. 09/788339 in view of Yamagishi et al. (U.S. Pat. No. 6,300,556).

Copending Application No. 09/788339 claims "a front surface side light transmitting member containing at least sodium, a rear surface member, and a solar cell element sealed with sealing resin between the front surface side light transmitting member and the rear surface member" (claim 1). Copending Application No. 09/788339 further discloses a front surface side light transmitting member made of glass and a rear surface member formed of a transparent resin film (claims 3 and 5).

Copending Application No. 09/788339 and the instant invention differ because the instant invention requires a plurality of solar cell elements and a water transmission preventing layer.

Yamagishi et al. disclose a solar cell module that has a plurality of solar cell elements sealed with sealing resin **9** between the front member **1** and the rear surface member **8** (col. 3, line 18; fig. 1). In the solar cell module of Yamagishi et al., the rear surface resin film **8** also functions as the water transmission preventing layer (col. 5, line 59). The rear surface resin film **8** has a water vapor transmission rate (WVTR) smaller

than the WVTR of the EVA sealing resin **9** (see p. 22, line 8 of the instant application for WVTRs). The rear surface resin film **8** covers the interval part between adjacent solar cell elements (fig. 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the solar cell module of copending Application No. 09/788339 to use a plurality of solar cell elements because using a plurality of elements would provide additional power. It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the solar cell module of copending Application No. 09/788339 with the water transmission preventing layer taught by Yamagishi et al. because the copending Application No. 09/788339 teaches that "a solar cell module should be weather proof in order to withstand long-term use outside" (p. 3, line 7).

This is a provisional obviousness-type double patenting rejection.

19. Claims 4 and 9 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of copending Application No. 09/788339 in view of Yamagishi et al. (U.S. Pat. No. 6,300,556), and further in view of Otani et al. (PG-Pub 2001/0009160 A1).

Copending Application No. 09/788339 in view of Yamagishi et al. describes the limitations of claim 1 of the instant invention, as explained above in paragraph 17. The described solar cell module differs from the instant invention because the instant

invention claims the use of an inorganic oxide layer, a nitride layer or a fluoride layer formed on a surface of the rear surface resin film, as recited in the limitations of claim 4.

Otani et al. teach the use of an inorganic oxide layer on a transparent resin film because "a coating of inorganic oxide is preferably used as a moistureproof layer" over metal layers, which have "a possibility of current leakage" (par. [0042]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided an inorganic oxide layer on the rear surface resin film of the solar cell module described by copending Application No. 09/788339 and Yamagishi et al. because inorganic oxide layers create moistureproof layers while eliminating the possibility of current leakage, as taught by Otani et al. (par. [0042]).

With respect to claim 9, Yamagishi et al. disclose a water transmission preventing layer that is the rear surface resin film. However, Yamagishi et al. do not disclose the layer having a WVTR no higher than  $6.3\text{g/m}^2\cdot\text{day}$ , as recited in claim 9 of the instant invention.

Otani et al. disclose a resin film that is made of PET to a thickness of  $250\mu\text{m}$ , which corresponds to a WVTR of  $2.5\text{g/m}^2\cdot\text{day}$  (par. [0044]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the solar cell module described by copending Application No. 09/788339 and Yamagishi et al. to use the resin film of Otani et al. as the rear surface resin film because the resin film taught by Otani et al. has a very low

WVTR, which would help prevent against performance degradation due to water absorption.

This is a provisional obviousness-type double patenting rejection.

20. Claim 5 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of copending Application No. 09/788339 in view of Yamagishi et al. (U.S. Pat. No. 6,300,556), and further in view of Jansen et al. (U.S. Pat. No. 6,077,722).

Copending Application No. 09/788339 in view of Yamagishi et al. describes the limitations of claim 1 of the instant invention, as explained above in paragraph 17, but do not disclose the use of a glass water transmission preventing layer bonded to the surface of the rear surface resin film, as recited in the limitation of claim 5 of the instant invention.

Jansen et al. teach the use of a glass rear layer **44** bonded to a rear resin surface film **46** to "provide enhanced environmental protection for the photovoltaic module" (col. 5, line 27; col. 8, line 61; fig. 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the solar cell module described by copending Application No. 09/788339 and Yamagishi et al. to use the glass water transmission preventing layer taught by Jansen et al. because the glass layer would "provide enhanced environmental protection for the photovoltaic module" (col. 5, line 27).

This is a provisional obviousness-type double patenting rejection.

21. Claim 6 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of copending Application No. 09/788339 in view of Yamagishi et al. (U.S. Pat. No. 6,300,556), and further in view of Haigh et al. (U.S. Pat. No. 6,265,653).

Copending Application No. 09/788339 in view of Yamagishi et al. describes the limitations of claim 1 of the instant invention, as explained above in paragraph 17, but do not disclose forming the water transmission preventing layer on a plane with the solar cell elements, as recited in the limitations of claim 6.

Haigh et al. disclose a solar cell module having a layer **38** formed on a plane with the solar cell elements **30**, **32** (col. 4, lines 33 and 57; fig. 5). The layers **38** are formed of materials with low WVTRs and electrically isolate the cells from each other (col. 4, line 33).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the solar cell modules described by copending Application No. 09/7883339 and Yamagishi et al. to use the layers of Haigh et al. formed on a plane with the solar cell elements because making the modules with water transmission preventing layers on a plane with the solar cell elements would not only provide protection against water, but would also electrically isolate the solar cells from one each other, as taught by Haigh et al. (col. 4, line 33).

This is a provisional obviousness-type double patenting rejection.



22. Claim 8 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of copending Application No. 09/788339 in view of Yamagishi et al. (U.S. Pat. No. 6,300,556), and further in view of Matsushita et al. (U.S. Pat. No. 6,222,118).

Copending Application No. 09/788339 in view of Yamagishi et al. describes the limitations of claim 1 of the instant invention, as explained above in paragraph 17, but do not disclose providing the water transmission preventing layer on an outer side of the rear surface resin film.

Matsushita et al. teach the use of waterproof films **56, 57** on the outer side of each substrate **21, 22** (col. 7, line 61). The waterproof films **56, 57** are used to prevent the substrates **21, 22** from absorbing water (col. 8, line 5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the solar cell modules described by copending Application No. 09/788399 and Yamagishi et al. to use water transmission preventing layers on an outer side of the rear surface resin film because having a water transmission preventing layer on an outer side of the rear film would prevent the rear film from absorbing water, as taught by Matsushita et al. (col. 8, line 5).

This is a provisional obviousness-type double patenting rejection.

### ***Response to Arguments***

23. Applicant's arguments filed June 13, 2002 have been fully considered but they are not persuasive.

24. Regarding Applicant's arguments of the rejection of claims 1-3 and 7 under 35 U.S.C. 102, Applicant has repeatedly stated that "the present invention includes a *separate* rear surface resin film and a separate water transmission prevention layer" (see page 14, second paragraph of Response; emphasis added by Examiner). This argument is invalid. First of all, claim 9 recites the limitation that "the water transmission preventing layer is the rear surface resin film". Furthermore, in the specification on page 25 at lines 3-11, it states "the rear surface resin film...can function as a water transmission preventing layer". In light of claim 9 and the specification, the claimed invention can have a rear surface resin film that is the water transmission preventing layer. Therefore, both Yamagishi et al. and Kondo et al. anticipate the claimed invention. Second, Yamagishi et al. further disclose that the rear surface resin film can be a single film or a laminate of films (col. 5, lines 59-63).

25. Applicant also argues that Yamagishi et al. do not disclose the water transmission film including at least an interval part between the solar cell elements adjacent each other (Response, page 14). Figures 1-5 clearly show the protective layer covering the entire module, including the solar cells and the spaces between the cells.

26. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a

Art Unit: 1753

reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

27. Applicant has argued that the combination of Yamagishi et al. in view of Otani et al., Jansen et al. and Haigh et al. Otani et al. disclose a "high-moistureproof film" in an attempt to solve the same problem as Yamagishi et al.: preventing water from penetrating into the active solar cell regions. Jansen et al. teach the use of glass to provide "enhanced environmental protection for the photovoltaic module". Providing "enhanced protection" is motivation for using glass in the device of Yamagishi et al. because a glass layer will provide more protection against water. Haigh et al. place a water prevention layer on the same plane as the solar cells. Yamagishi et al. provide a protective encapsulant surrounding the solar cells and teaches that preventing water from reaching the solar cells is important. It would have been obvious to one having ordinary skill that using a better water-preventing layer adjacent the solar cells would increase the amount of protection to the solar cells. Since motivation for modifying the device of Yamagishi et al. is present, no impermissible hindsight was used in making the rejections.

28. Regarding claim 8, Applicant has argued that using a water preventing sheet would "change the principle of operation" of Yamagishi et al. (Response, page 20). In light of the fact that Yamagishi et al. disclose the use of a laminated film as the rear surface protective layer, it is not clear how the placement of the water preventing layer would change the principle of operation. Both of the different layers disclosed in the laminate of Yamagishi et al. can function as either the rear surface protective film or the

Art Unit: 1753

water preventing film. Therefore, either placement would function in an equivalent manner.

29. Regarding the provisional double patenting rejection, the Applicant has recited that claims 1-5 of the copending application are distinct from the claims of the instant application. The copending application recites the limitations in the instant claims including a rear surface member. The difference between the instant invention and the copending application is that the copending application does not say that the rear surface member can act as a water-preventing layer. It would have been obvious to one having ordinary skill in the art to use a rear surface member that protects the solar cell from environmental damage.

### ***Conclusion***

30. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of


Art Unit: 1753

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian L. Mutschler whose telephone number is (703) 305-0180. The examiner can normally be reached on Monday-Friday from 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (703) 308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
NAM NGUYEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700

blm  
July 9, 2002